Household Poverty Reduction Model During the Covid-19

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Abstract. The research objectives are (1) to analyze the poverty level in Tanjung Jabung Barat Regency and (2) to analyze the household poverty reduction model during the covid-19 pandemic. The research was conducted in Tanjung Jabung Barat Regency, Jambi Province, for eight calendar months. Research data is sourced from primary data and secondary data. Respondents or household analysis units were taken by simple random sampling with 150 farmers as respondents. Social capital, socio-demography, family food security, and poverty are the research variables. The analysis was carried out using the Structural Equation Model (SEM) through the Linear Structural relationship (LISREL) program to determine the effect of socialcapital and socio-demographic on food security and poverty reduction. The results showed that the poverty rate in the study area was low. The analysis results show that social capital positively impacts food security and reduces poverty during the covid-19 pandemic.

Keywords: Covid-19 pandemic · Food security · Sosio-demographic · Poverty reduction · Social capital

1 Introduction

In 2010, Jambi Province's economic growth was 6.20 percent per year, but in 2020, it was -0.46 percent per year owing to the COVID-19 pandemic, which increased population poverty [1, 2]. Based on the Central Berau of Statistics of Jambi Province, the population of poor people in the province was 259,750 in 2010 and 274.32 in 2019. In 2021, there were 8.09 percent (293,860) more poor people in Jambi Province than in 2010 [3, 4]. The high poverty rate during the Covid-19 pandemic was caused by job limitations and the policy of Large-Scale Social Restrictions.

Tanjung Jabung Timur has the poorest people, followed by Tanjung Jabung Barat and Batanghari. Sungai Penuh City has the smallest. Tanjung Jabung Barat Regency is located on the east coast of Sumatra and has the most land in Jambi's eastern section. The Central Berau of Statistics report for Tanjung Jabung Barat Regency (2020) shows that its area is 5,009.82 km^2 (500,982 Ha), or 9.38 percent of Jambi Province's 53,435.72 km^2, with a land area of 4,868.08 km^2 and a water area of 141.75 km^2. Tanjung Jabung Barat's potential isn't associated with its welfare. Tanjung Jabung Barat Regency's poverty rate is 10.29%, or 34,790 people, making it the second poorest area in Jambi Province [5].

Table 1. Distribution of the Poor in the Study Area, 2022

No.	Expenditure (Million/Month)	Amount	Percent (%)
1.	<2.000	11	7,33
2.	2.000–2.999	48	32,00
3.	3.000–3.999	58	38,67
4.	4.000–4.999	19	12,67
5.	$\geq$5.000	14	9,33
	Total	**150**	**100,00**
	Average	**Rp.2.986.020**	

To reduce poverty in Tanjung Jabung Barat, advances in technology, community resources, and local institutions are needed. Three subsystems are connected, especially social institutions. Several researchers say farmer institutions (social capital) play an essential role in rural development, incorporating technology and human resources. Found that strong individual households' social capital (social network) can help them obtain access to society [6]. Participation in local associations, especially production associations, can increase family income by 6.2% per capita per year [7]. The purpose of the study was to analyze the poverty level in Tanjung Jabung Barat Regency and analyze the household poverty reduction model during the covid-19 pandemic.

2   Methods

The study was conducted in Tanjung Jabung Barat Regency, Jambi Province, using a cross-sectional design. The study takes eight months and focuses on poverty (adequacy of food, non-food needs, and investment needs), socio-demographics (age of head of household, education of head of household, number of dependents, and business experience), household food security (food availability, food accessibility, and food utilization), and social capital (social norms, trust, networking, reciprocation, and cooperation). Primary and secondary data come from structured interviews with research samples (respondents) utilizing instruments or questionnaires. A simple random sample in each village of 25 families produced 150 responses. Descriptive and statistical tests analyzed data. The effect of social and socio-demographic capital on poverty reduction and food security during the covid-19 pandemic was tested using the Structural Equation Model (SEM) tool.

3   Result and Discussion

3.1   Family Poverty

Poverty is the inability to meet basic needs such as food, clothing, health, housing, and education. Minimum basic requirements are translated as financial measures in terms of money. The value of the minimum needs/basic needs is known as the poverty line,

where people whose income is below the poverty line are classified as poor [2]. In 2020, the Regional Minimum Wage (UMR) for Jambi Province was Rp.2.630.162 [4].

The study area's average income was Rp.2.986.020/month. This income is higher than Jambi's 2020 UMR [4]. Affluent farmer families live in this area, where rice costs Rp.8.500/kg. Multiplying this with Sayogyo's norm of 320 yields Rp.2.720.000.00 per capita each month [6]. Depending on household income, 42% are poor (Table 1). Oil palm, coffee, deep coconut, areca nut, and tidal rice are the principal crops in the study area. These findings match the peatland-dominated research area. Other sources of income include trade, non-farming work, and civil servants and retirees.

The study area has 42 percent of the poor because, during the COVID-19 pandemic, they experienced limited activities due to health problems and limited job opportunities. This finding is supported by research by Junaidi et al. (2021), that the shortage of household food during the COVID-19 pandemic results from limited work and population activities. Another limitation of poverty in this study is the relative condition defined and formed through social interaction [6]. The definition of poverty is based on social stratification (subjective poverty) as measured by the level of satisfaction with fulfilling family needs.

Families express satisfaction with their level of welfare. The high and low level of family satisfaction is measured by the composite value of the family's subjective economic well-being based on three variables: (1) satisfaction with food needs, (2) satisfaction with non-food needs, and (3) satisfaction with investment needs with values as follows: (1) unsatisfied, (2) dissatisfied, (3) satisfied, and (4) very satisfied. Disparity analysis uses the poverty variable, expenditure fraction, and subjective poverty variable. In contrast, the structural analysis uses the poverty variable in the distribution context, such as expenditure allocation and satisfaction with food and non-food needs and expenditure and satisfaction with human resource investment needs.

According to discussions with agricultural families, satisfaction in fulfilling family needs is reasonable. The percentage of families in the study area satisfied with fulfilling their daily needs, including food, non-food, and investment needs, reached more than 80%, except for investment needs, which only got 78% (Fig. 1). Natural conditions,
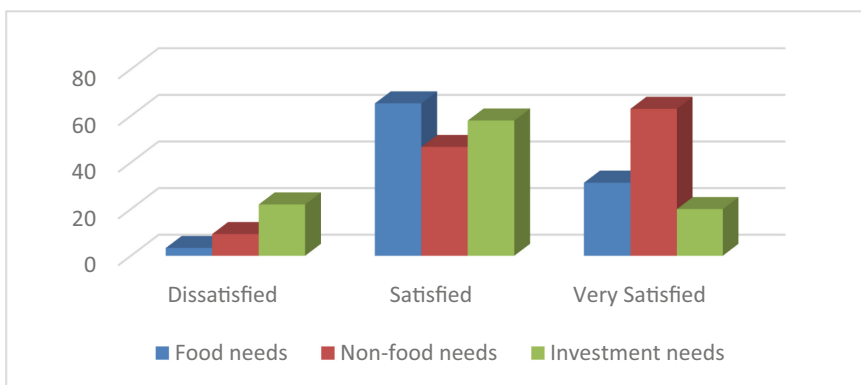

Fig. 1. Graph of Distribution of Respondents Based on Household Needs, 2022

Table 2. Distribution of Respondents Based on Food Security of the Population in the Study Area, 2022

No.	Family Food Security	Respondent Satisfaction (%)			Number of Respondents
		Less available	Available	Very available	
1.	Food Availability	18,67	56,00	25,33	**150**
2.	Food Accessibility	9,33	64,67	26,00	
3.	Consumption Utilization	10,00	48,00	42,00	

employment opportunities, regional accessibility, and human resource potential contribution to the study area's high community satisfaction. Peat land with little soil fertility is advantageous for food crops, horticulture, and plantation businesses. The study area's principal commodities are tidal lowland rice farming, oil palm plantations, deep coconut, areca nut, coffee, and food crops (maize and soybeans). It will also open many off-farm opportunities in the agro-industry, home industry, services (transportation, telecommunications), and other sectors, increasing people's income. Says employment determines community income or welfare. [8].

3.2 Family Food Security

Food security is the availability of sufficient (quantity and quality), safe, diverse, nutritious, equitable, and inexpensive food that does not contradict religion, belief, and culture. Food security is the condition of having enough food to sustainably live a healthy, active, and productive life [9]. Food security comprises physical dimensions (availability), economy (buying power), nutrition (meeting nutritional needs), cultural and religious values, health, and time (available sustainably [10]. Every household or individual needs food following local values or culture to live a healthy existence. Table 2 shows the respondents' food security ratings.

The research area's inhabitants were rated as having good food security (Table 2). Data shows that more than 80% of farmer groups in the study area have food security classified as available and highly available. Regarding availability, accessibility, and consumption, food security will reduce poverty.

3.3 Social Capital

LF. Hanifan developed social capital in West Virginia in 1916, according to Woolcock. Bourdieu [11]. Defines social capital as a group's concrete resource. Unnaturally dynamic work is social capital. Individuals and groups invest in social capital. This can be done through family/kinship (bonding), community/bridging, and workplace/formal relationships (linking). Social capital through bonding, bridging, and linking networks affects the adoption of technological innovations in a farm management [12]. Social
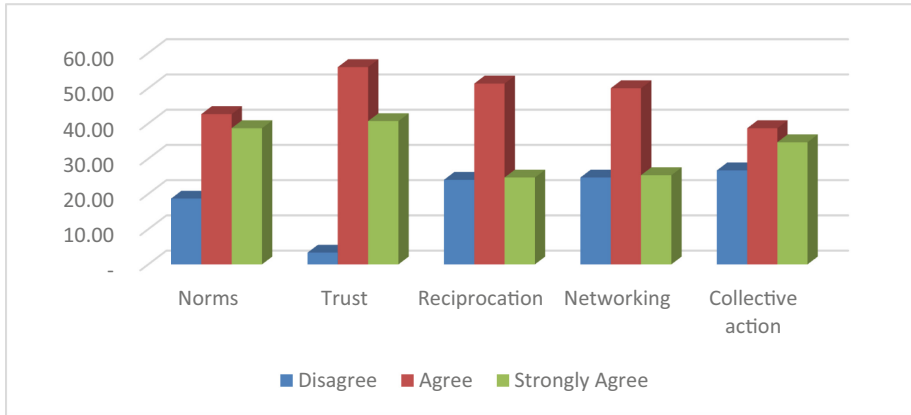
Fig. 2. Graph of Distribution of Respondents' Social Capital in Research Areas, 2022

capital contributes to development through partnerships [13]. Trust, reciprocity, social networks, conventions, and commitment impact the longevity of this connection [14]. Cultural values, not individual values, determine social capital [15].

Coleman defines social capital as a resource since it can improve individual and society well-being (natural, economic and human resource) [11]. Social capital as an organisational resource can promote rural financial inclusion. Coleman noticed that social structures had numerous types of action and regulations that people and society can utilise, including obligations, expectations, knowledge, and standards that can hinder and stimulate human behaviour. Coleman sees trust in societal structures. Coleman believes in others who work for the common interest because a socially structured life must have shared hopes and obligations. Coleman emphasises norms and sanctions in families and the society to define social capital.

At the macro level, social capital might represent relationships/networks, beliefs, and norms as shared facilities or bridges [11]. Putnam's operationalization of social capital focuses on regional and national economic and political trends. Social capital is linked to economic and political norms. Social capital is a sort of advantageous formal and informal social and economic networking in society. Social capital can be realised through structural and dimensional aspects [6]. Character dimension is determined by an individual or group's reliability, solidarity, and spirit.

Field data shows that the community and lowland rice farmers in Tanjung Jabung Barat District have high social capital potential. 73% more farmers agree or strongly disagree with the role and benefits of social capital in paddy farm management and agribusiness growth (Fig. 2). Social capital owned by farmers helps change various technical packages for lowland rice farming and agribusiness in Tanjung Jabung Barat Regency. The results of this study are consistent with [16] regarding social capital's effect on institutional progress and [17] on social capital's relation to farmer group welfare. Say social capital affects farming sustainability through cooperative networks, reciprocity, trust, norms/rules, shared values, and proactive members [18]. Research reveals that social capital can increase farmer productivity through trust, participation,

social networking, and social norms [19]. Research adds that social capital helps reduce poverty [13].

3.4 Relationship of Social Capital and Socio-Demography with Food Security and Poverty

The relationship between social capital and socio-demography with food security and poverty was analyzed using the SEM model. Through this model, it can be seen the effect or relationship between the constructs causally. The construct variable consists of four main latent variables: social capital, socio-demography, food security, and poverty. In the analysis, (1) Social capital (MS) with loading (X1) social norms, (X2) trust, (X3) reciprocity, (X4) social network, and (X5) cooperation. (2) Socio-demographic (SD) with variable loading (X6) farmer age, (X7) farmer education, (X8) number of family members, and (X9) business experience. (3) Household food security with loading variables: (Y1) food availability, (Y2) food accessibility, and (Y3) food consumption. (4) Poverty alleviation (PK) with loading variables (Y4) satisfaction of food needs, (Y5) satisfaction of non-food needs, and (Y6) satisfaction of investment needs.

Based on the analysis through the SEM model with the LISREL program, the results obtained that the research construct's validity level on the influence of social capital and socio-demography on food security and poverty in the research area is quite valid. The models compiled in the research design match or fit the data collected. The suitability or reliability of the research design and the data collected is indicated by the values of the test equipment used, where the model test results approach and exceed the desired cut-off value (Table 3).

Explained that there were 31 test tools used in testing the model [20]. Hoever, the tests that are often used and relevant are measuring the Chi-Square (X2), Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), and Comparative Fit Index (CFI) values The results of model testing show that the item loadings for latent variables in the model also show a very significant internal consistency (reliability). Figure 1 shows that the latent variable of social capital, which consists of five dimensions: social norms, trust, reciprocation, social networks, and cooperation/cooperation, has a significant loading value. Through the model, it is known that item loadings (X1) social norms ($\lambda = 0,57$); (X2) trust ($\lambda = 0,77$); (X3) reciprocation ($\lambda = 0,56$); social networks

Table 3. Goodness of Fit Index The Effect of Social Capital and Socio-demography on Food Security and Poverty Reduction, 2022

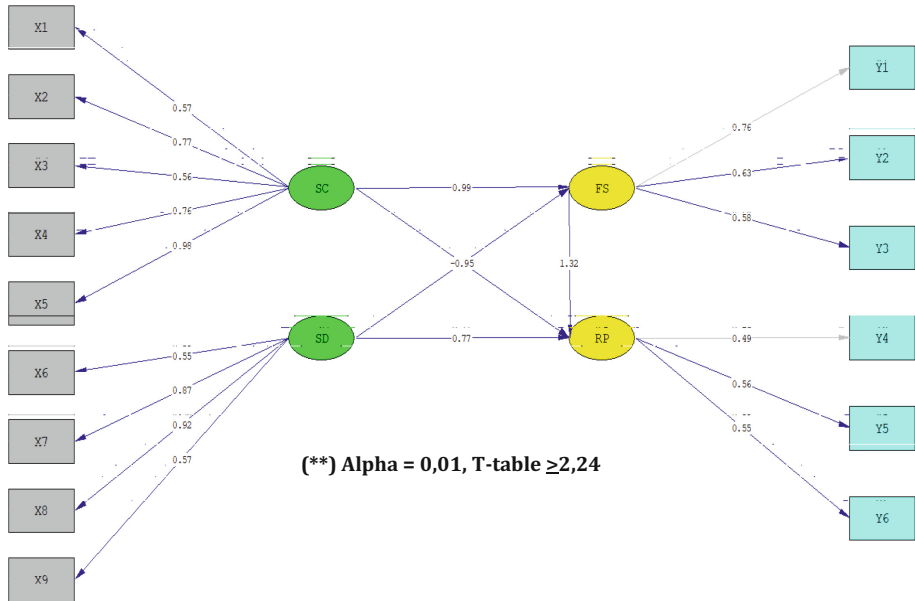| No.	Goodness of Fit Index	Cut-off Value	Research Data
1.	X^2 (Chi-Square) = no sign or smaller	0,00	0,00
2.	RMSEA (Root Mean Square Error of Approximation)	<0.08	0,07
3.	GFI (Goodness of Fit Index)	≥0,90	0,91
4.	CFI (Comparative Fit Index)	≥0,94	0,96

Source: Joreskog & Sorbom (Suandi, 2014)

Fig. 3. Household Poverty Reduction Model

($\lambda = 0{,}76$); and cooperation ($\lambda = 0{,}98$). The same thing is also shown by item loadings on latent socio-demographic variables and other latent with a significant value (Fig. 3).

The analysis results show that social capital positively impacts food security and reduces poverty during the covid-19 pandemic, with a Betha value of 2,6 and 2,01. In contrast, socio-demographic factors only significantly affect poverty reduction, with a Betha value of 2,2. It indicates that social capital significantly impacts food security and reduces poverty but needs to be organized intensively and professionally. This finding proves the hypothesis that was built previously that social capital and socio-demography can causally affect the level of food security and poverty reduction. It means that the greater the role and contribution of social capital, the better the level of food security to reduce poverty.

This study is in line with Deaton's research (2020) case study in Canada, which proves that the family food management strategy during COVID-19 uses social capital through capital flows from outside through global networking. Other research also proves that social capital affects people's lives during the COVID-19 pandemic through cooperation, solidarity, and the use of networks [21].

Focus group discussions supported this analysis's results. Community groupings demonstrate the role of social capital. The results of the FGDs show that the collective working group (paguyuban) is more progressed than the areas without a group. In several countries, including a study in Latin America, there are real and significant positive differences between farmers with groups (social capital) and farmers without groups, especially in the activity of community members in local association activities, especially in community activities [22].

Social capital can help people access public facilities like water and irrigation, credit, and agricultural/technology inputs. The network of production and social groups in society increases social capital access. This study's results are similar to Haddad's (2000) research in South Africa, which suggests that a substantial individual family social capital (social network) can help acquire access to society. Granovetter (Bandiera & Amran, 2006) found that farmers acquire new technologies through social networks formed through bonding and bridging groups. The study found that social interactions in community groups helped farmers adopt modern technology in rural locations. Farmers are highly motivated to apply new technologies through social networks since they trust each other, need each other, and have never broken up. These findings show that creating a partner network is closely related to members' social capital.

Other research also proves that social capital is vital in increasing people's income, mainly in farming production and work productivity. This condition is supported by the culture adopted in the research area in the farming management system called the "paguyuban" system. This system makes it very easy to build cooperation. Familiarity and the same cultural background are beneficial in using shared facilities because they have a high emotional level for the common good. Kahkoren (Grootaert: Suandi, 2014) exemplifies that the management of irrigation development in Bangladesh is similar to the heart system in the Jambi community. He proves that cooperation between groups of the same ethnicity and culture is very beneficial in managing irrigation dams, especially the spirit of cooperation.

4   Conclusion

The population's average income in the study area is relatively high, reaching Rp.2.986.020 per month. The income earned by the population is higher than the Regional Minimum Wage (UMR) of Jambi Province in 2020. The results show that the population in the study area belongs to the affluent group and is satisfied with meeting family needs, both food, non-food, and investment needs. The analysis results show that social capital positively impacts food security and reduces poverty during the covid-19 pandemic. In contrast, socio-demographic factors only have a significant effect on poverty reduction.

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